

Clinical and Histological Evaluations of a 1060nm Laser Device for Non-Invasive Fat Reduction

JOHN W. DECORATO, MD, FACS

Study Design:

- 17 subjects in total were treated; 11 treatments being in the abdomen and 6 in the flank.
- Pre- and post-treatment, a thermocouple needle was placed into the treatment area to measure tissue temp at interval depths (5, 10, 15, 20, 25, 30mm).
- 1060nm diode laser with contact cooling for skin protection to cause injury to subcutaneous adipose tissue (SAT) by establishing a controlled hyperthermic temperature of 42-47°C.

Evaluation:

- Ultrasound measurements of fat thickness were performed at baseline, 6 and 12 weeks post-treatment.
- High resolution photographs were taken at baseline and 12 weeks post-treatment.

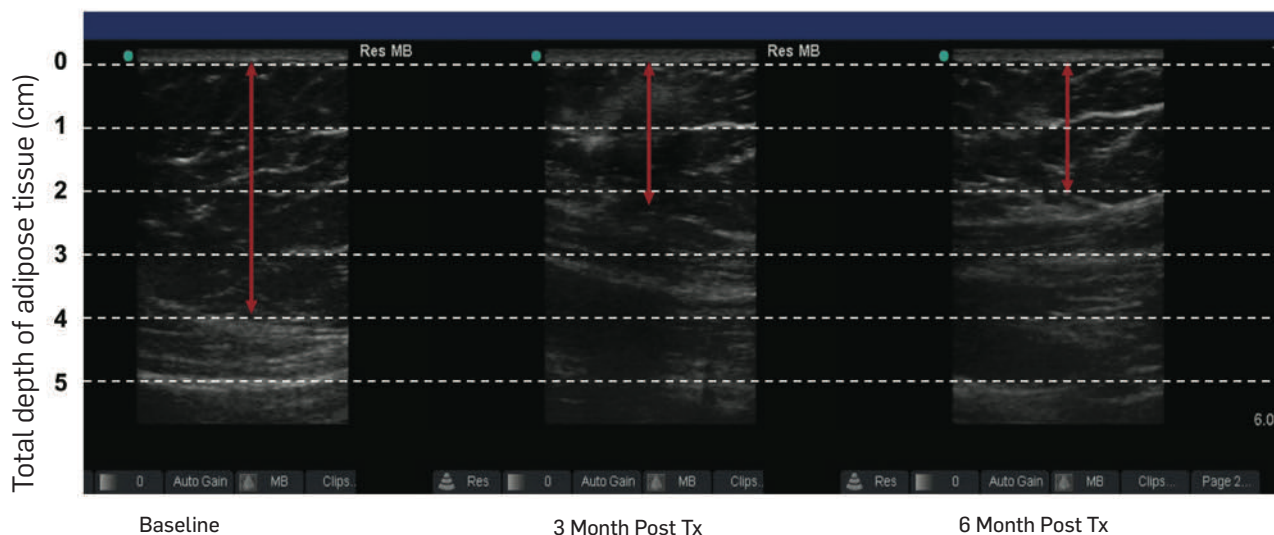
Results:

- Laser treatments were well-tolerated by all subjects with no damage to the skin.
- Side effects included mild pain, stinging and numbness, all resolved by 2 weeks.

Conclusion:

- Ultrasound, MRI, and photographic evaluations show similar level of fat reduction by laser hyperthermic treatment as compared to cryolipolysis (24%).
- The *in vivo* tissue response demonstrated that a prolonged hyperthermic exposure can cause adipocyte injury.

Fat thickness changes demonstrated by ultrasound



Results-MRI Measurements

Average reduction in fat volume as compared to cryolipolysis:

	3 MONTH POST TX		6 MONTH POST TX	
Fat Volume Reduction	Laser Side	Cryo Side	Laser Side	Cryo Side
Average Reduction	24% (±9%)	22% (±13%)	21% (±10%)	19% (±9%)

Example of fat thickness changes demonstrated by MRI:

